Errata List

March 14, 2023

Numerical Methods for Elliptic and Parabolic Partial Differential Equations
by Peter Knabner and Lutz Angermann, with contributions by Andreas Rupp
Second Extended Edition, Springer, Cham, 2021

This is a list of all known errata in the first printing of the book, where corrections or supplements are indicated by (C) or (S), respectively.
Further comments are gratefully welcome.

(C) p. 350, l. 13:

$v \in V_h$ is to be replaced by $v_h \in V_h$

(C) p. 352, l. 2:

$\| \cdot \|_V$ is to be replaced by $\| \cdot \|_U$

(C) p. 354, formula (6.24):

$\|u\|_Y$ is to be replaced by $\|u\|_W$

(C) p. 354, l. 5–6:

assuming without loss of generality the same regularity for the original and adjoint problems, in particular $u \in Y$

   is to be replaced by

in particular $u \in W$

(C) p. 354, l. 8:

$C_{cp}C_\alpha C_s h^{q+\beta}$ is to be replaced by $C_{cp}C_\alpha C_s h^{q+\beta}\|u\|_W$

(C) p. 354, formula (6.25):

$\|v_g\|_Z$ is to be replaced by $\|v_g\|_Y$

(C) p. 354, formula (6.26):

$a(u - u_h, v_g - v_{gh})$ is to be replaced by $(a - a_h)(u - u_h, v_g - v_{gh})$

(C) p. 355, l. 5:

$u, v_g \in V$ is to be replaced by $u \in U, v_g \in V$

(C) p. 355, l. 5:

$u_h, v_{gh} \in V_h$ is to be replaced by $u_h \in U_h, v_{gh} \in V$

(C) p. 400, l. 10:

$\boldsymbol{p}_K$ is to be replaced by $\boldsymbol{p}|_K$

(C) p. 401, l. 5:

$L^2(\mathcal{F}_1 \cup \mathcal{F}_2)$ is to be replaced by $L^2(\widetilde{\Gamma}_1 \cup \widetilde{\Gamma}_2)$

(C) p. 401, l. 8:

$d\sigma$ is to be replaced by dx

(C) p. 402, l. -7:

$v(a_{S,F})$ is to be replaced by $v_h(a_{S,F})$

(C) p. 403, l. -4:

$[\![u_h^2]\!]$ is to be replaced by $[\![u_h]\!]^2$

(C) p. 406, l. 7:

$(\boldsymbol{a}_K + \boldsymbol{a}_{K'}) \cdot (b_K \boldsymbol{c}_K + b_{K'} \boldsymbol{c}_{K'}) + (b_K + b_{K'})(\boldsymbol{a}_K \cdot \boldsymbol{c}_K + \boldsymbol{a}_{K'} \cdot \boldsymbol{c}_{K'})$

   is to be replaced by

$(\boldsymbol{a}_K + \boldsymbol{a}_{K'}) \cdot (b_K \boldsymbol{c}_K + b_{K'} \boldsymbol{c}_{K'}) - (b_K + b_{K'})(\boldsymbol{a}_K \cdot \boldsymbol{c}_K + \boldsymbol{a}_{K'} \cdot \boldsymbol{c}_{K'})$

(C) p. 447, l. 5:

$C^0(\Omega)$ is to be replaced by $C^0(\overline{\Omega})$

(C) p. 447, l. 7 and l. 9:

test and trial   is to be replaced by   ansatz and test

(C) p. 452, l. -2:

(6.26)   is to be replaced by   (6.27)

(C) p. 481, formula (7.161):

$L^2(\mathcal{F} \cup \mathcal{F}_3)$ is to be replaced by $L^2(\mathcal{S}^0 \cup \widetilde{\Gamma}_3)$

(C) p. 481, l -6:

and $\tilde{a}_h$ as given by a is to be replaced by   where $\mathcal{S}^0 := \bigcup_{F \in \mathcal{F}} F$, and $\tilde{a}_h$ as given by a

(C) p. 629, l. 5 in Programming project 9.3:

implemantation   is to be replaced by   implementation